# (11) EP 0 881 354 A3

(12)

### **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3: 15.03.2000 Bulletin 2000/11

(51) Int Cl.7: **E21B 43/10**, E21B 33/14

(43) Date of publication A2: **02.12.1998 Bulletin 1998/49** 

(21) Application number: 98400997.7

(22) Date of filing: 24.04.1998

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

Designated Extension States:

AL LT LV MK RO SI

(30) Priority: 27.05.1997 US 863652

(71) Applicants:

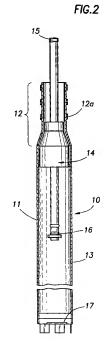
SOFITECH N.V.
 1180 Bruxelles (BE)
 Designated Contracting States:
 DE DK GB IE IT NL

 COMPAGNIE DES SERVICES DOWELL SCHLUMBERGER
 92541 Montrouge Cédex (FR)
 Designated Contracting States: (72) Inventors:

- Vercaemen, Claude J.
   83E Houston, Texas 77056 (US)
- Darling, Brian W.E.
   Sugar Land, Texas 77479 (US)
- (74) Representative: Menès, Catherine et al Etudes et Productions Schlumberger Division Dowell 26, rue de la Cavée B.P. 202
   92142 Clamart Cédex (FR)

#### (54) Method and apparatus for cementing a well

(57) A method of cementing a well permitting a reduction in the degree of diameter reduction of casing or liners required, and not requiring excessively large initial conductor casing, is described. The method is characterized by provision of an enlarged wellbore and a novel liner structure which is adapted for expansion of a reduced diameter section thereof downhole, providing, before expansion of the section, unimpeded flow of fluid from the enlarged wellbore during cementing and close fit of the expanded section with the casing or preceding liner, after cementing is completed and expansion of the section. A novel well liner structure and novel well liner expansion means are disclosed.



EP 0 881 354 A3



## **EUROPEAN SEARCH REPORT**

Application Number EP 98 40 0997

	DOCUMENTS CONSID	ERED TO BE RELEVANT		
Category	Citation of document with in of relevant passa	dication, where appropriate, ages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Ci.6)
X,P	WO 98 00626 A (SHEL CANADA LTD (CA)) 8 January 1998 (199 * page 8, line 24 - * figure 1 *	L INT RESEARCH ;SHELL 8-01-08) page 9, line 5 *	6,8	E21B43/10 E21B33/14
Ą	WO 93 25799 A (SHEL RESEARCH (NL)) 23 December 1993 (1 * figures 1-6 *	L CANADA LTD ;SHELL INT 993-12-23)	1,3,6	
A	TOOL FOR DIFFICULT OIL AND GAS JOURNAL	June 1996 (1996-06-03),	1,3,6	
A	US 3 669 190 A (SIZ 13 June 1972 (1972- * the whole documen	ER PHILLIP S ET AL) 06-13) t *	1,3,6	TECHNICAL FIELDS SEARCHED (Int.Cl.6) E21B
	The present search report has t	peen drawn up for all claims		
	Place of search	Date of completion of the search	<u> </u>	Examiner
	THE HAGUE	20 January 2000	Sch	outen, A
X : parti Y : parti docu A : tech O : non-	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with another icularly relevant if combined with another icularly relevante of the same category inological background -written disclosure rmediate document	T: theory or principle E: earlier patent doc after the filing date D: document cited in L: document ofted fo  &: member of the sa document	ument, but public the application or other reasons	shed on, or

EPO FORM 1503 03.82 (P04C01)

#### ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 98 40 0997

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

20-01-2000

Patent document cited in search repo	rt	Publication date	Patent family member(s)	Publication date
WO 9800626	A	08-01-1998	AU 3442097 A BR 9710016 A CA 2260191 A EP 0907822 A NO 986171 A	21-01-199 10-08-199 08-01-199 14-04-199 22-02-199
WO 9325799	A	23-12-1993	AU 670948 B AU 4324493 A CA 2137560 A DE 69306110 D DE 69306110 T DK 643794 T EP 0643794 A JP 7507610 T NO 944721 A NZ 253124 A SG 46560 A US 5348095 A	08-08-199 04-01-199 23-12-199 02-01-199 05-06-199 05-05-199 22-03-199 24-08-199 07-12-199 27-02-199 20-02-199
US 3669190	A 	13-06-1972	NONE	
US 3669190	Α	13-06-1972 	NONE	

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

FORM P0459